

# NETWORK-BASED SECURITIES TRANSACTION SYSTEM

## Background of the Invention

### 1. Field of the Invention

5           The present invention relates to a network-based securities transaction technique for buying and selling securities, such as stocks, funds, and bonds. More particularly, the present invention relates to a network-based securities transaction technique for facilitating settlement  
10 of accounts for securities transaction.

### 2. Description of the Related Art

          An on-line transaction business of  
15 securities through a network such as the Internet has been popularly carried out in recent years. Fig. 1 is a block diagram showing a conventional securities transaction system. The securities transaction system is composed of a customer  
20 terminal 110, a securities sales system 120, a securities transaction system 130, and a network 200. The customer terminal 110, the securities sales system 120, and the securities transaction system 130 are mutually connected through the  
25 network 200.

          An customer accesses a securities sales home page on the network 200 provided by the

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securities sales system 120, through the customer terminal 110 to determine securities to buy or sell, and then place an order for a transaction through the customer terminal 110.

5           The securities sales system 120 receives the order and sends a transaction order information indicative of a content of the ordered transaction to the securities transaction system 130. The securities transaction system 130  
10 performs the transaction in accordance with the sent transaction order information.

Also, international publication (WO9641293) and corresponding published Japanese translations of PCT international publication for patent

15 application (JP-A-Heisei, 11-507150) describes a brokerage system. The brokerage system achieves the brokerage through ATM (Auto teller Machine) network.

## 20                   **Summary of the Invention**

Therefore, an object of the present invention is to provide a securities transaction system for facilitating the settlement of  
accounts with respect to securities transactions.

25           Another object of the present invention is to provide a securities transaction system for preventing customers from carrying out an

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unreasonable transaction.

In order to achieve an aspect of the present invention, a system for performing transactions of securities is composed of a customer terminal, a securities sales system, a securities transaction system, an account management system, and a network. The customer terminal, the securities sales system, the securities transaction system and the account management system are connected to each other through the network. The customer terminal is programmed to show securities information concerning securities, and to send transaction order information and account indication information to the securities sales system, the transaction order information being indicative of a request for performing a customer-requested transaction from a customer, and the account indication information being indicative of a customer account for which the customer-requested transaction is to be requested. The securities sales system is programmed to provide the customer terminal with the securities information, and to transfer the transaction order information received from the customer terminal to the securities transaction system. The securities transaction system is programmed to perform a

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transaction in response to the transaction order  
information, and to send transaction result  
information indicative of the performed  
transaction to the securities sales system. The  
5 securities sales system is also programmed to  
produce settlement information indicative of  
settlement with respect to the performed  
transaction in response to the transaction result  
information and the account indication  
10 information. The account management system is  
programmed to settle the customer account in  
response to the settlement information.

The securities sales system is preferably  
programmed to store transaction condition  
15 information indicative of a transaction condition  
provided for the customer, and to transfer the  
transaction order information to the securities  
transaction system only when the customer-  
requested transaction fulfills the transaction  
20 condition.

The customer terminal is preferably  
programmed to send a customer ID for identifying  
the customer. In this case, the securities sales  
system is preferably programmed to provide the  
25 securities information in response to the  
customer ID.

Also, the securities sales system is

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programmed to provide the customer terminal in response to the customer ID with customer account information indicative of at least one available account to the customer. In this case, the customer terminal is preferably programmed to send the account indication information indicative of the at least one available account selected by the customer.

The network may be the Internet.

In order to achieve another aspect to the present invention, a method for performing transactions of securities is composed of:

providing securities information concerning securities by a customer terminal;

sending transaction order information and account indication information from the customer terminal to a securities sales system through a network, wherein the transaction order information is indicative of a request for

performing a customer-requested transaction from a customer, and the account indication information is indicative of a customer account for which the customer-requested transaction is to be requested;

transferring the transaction order information from the securities sales system to a securities transaction system through the

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network;

performing a transaction in response to the transaction order information by the securities transaction system;

5            sending transaction result information indicative of the performed transaction from the securities transaction system to the securities sales system through the network;

             producing settlement information indicative  
10 of settlement with respect to the performed transaction in response to the transaction result information and the account indication information by the securities sales system; and  
             settling the customer account in response  
15 to the settlement information.

             In order to achieve still another aspect of the present invention, a securities sales system for performing transactions of securities is composed of first receiving means for receiving  
20 transaction order information and account indication information, the transaction order information being indicative of a request for performing a customer-requested transaction from a customer, and the account indication  
25 information being indicative of a customer account for which the customer-requested transaction is to be requested, transferring

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means for transferring the transaction order  
information, second receiving means for receiving  
transaction result information indicative of a  
transaction performed in response to the  
5 transaction order information, and producing  
means for producing settlement information  
indicative of settlement with respect to the  
performed transaction in response to the  
transaction result information and the account  
10 indication information.

In order to achieve yet still another  
aspect of the present invention, a recording  
medium computer-readable recording medium storing  
a program for a method that is composed of:  
15 receiving transaction order information and  
account indication information, the transaction  
order information being indicative of a request  
for performing a customer-requested transaction  
from a customer, and the account indication  
20 information being indicative of a customer  
account for which the customer-requested  
transaction is to be requested,

transferring the transaction order  
information;  
25 receiving transaction result information  
indicative of a transaction performed in response  
to the transaction order information;

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producing settlement information indicative  
of settlement with respect to the performed  
transaction in response to the transaction result  
information and the account indication  
5 information.

### **Brief Description of the Drawings**

Fig. 1 is a block diagram showing a  
conventional securities transaction system;

10 Fig. 2 is a block diagram showing an  
embodiment of a securities transaction system  
according to the present invention;

Fig. 3A and 3B are flowcharts showing a  
processing executed in the securities transaction  
15 system;

Fig. 4 shows a customer information  
registered in a memory 21;

Fig. 5 shows a display of securities  
information on the customer terminal 10;

20 Fig. 6 shows a display of securities  
information screen after an order condition is  
inputted; and

Fig. 7 shows an account list.

### **25 Description of the Preferred Embodiments**

An embodiment of the present invention will  
be described below with reference to the attached

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drawings.

### System Overview

With reference to Fig. 2, an embodiment of  
5 a securities transaction system according to the  
present invention is provided with a customer  
terminal 10, a securities sales system 20, a  
securities transaction system 30, an account  
management system 40 and the Internet 100. The

10 customer terminal 10, the securities sales system  
20, the securities transaction system 30, the  
account management system 40 are connected to  
each other through the Internet 100.

The customer terminal 10 is a computer.

15 The customer terminal 10 is programmed to access  
a securities information provided by the  
securities sales system 20, and then shows the  
securities information to a customer. The  
securities information includes information with

20 regard to the securities such as stocks, funds,  
bonds, and stock index options. The customer  
terminal 10 is also programmed to send  
transaction order information and account  
indication information through the network 100 to

25 the securities sales system 20. The transaction  
order information is indicative of a transaction  
requested by the customer. The account indication

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information is indicative of a customer account for which the transaction is to be requested. Although Fig. 2 shows only one customer terminal, a plurality of customer terminals may be  
5 connected to the network 100.

The customer terminal 10 includes a recording medium K1 such as a disc, and a semiconductor memory. The recording medium K1 records thereon a program for instructing the  
10 customer terminal 10. The program instructs the customer terminal 10 to carry out the processes at steps A1, A3 to A7, and A21 shown in Figs. 3A and 3B.

The securities sales system 20 shown in Fig.  
15 2 is provided for operation by a broker. The securities sales system 20 is a computer such as a workstation and a server. The securities sales system 20 is programmed to receive the account indication information and the transaction order  
20 information from the customer terminal 10. The securities sales system 20 is also programmed to check errors in the transaction order information and the account indication information, and to send the transaction order information to the  
25 securities transaction system 30 if no error is found. Moreover, the securities sales system 20 is programmed to receive a transaction result

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from the securities transaction system 30, and sending account settlement information to the account management system 40 in response to the received transaction result indicating a content  
5 of the performed transaction. Although Fig. 2 shows only one securities sales system 20, a plurality of securities sales systems 20 may be connected to the network 100.

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The securities sales system 20 includes a  
10 memory 21 which registers therein a customer information shown in Fig. 4. The customer information contains a customer ID for each customer, a password, an account for which a transaction is to be requested, a condition(s) on  
15 which a transaction is permitted, and information indicative of securities held by each customer. In Fig. 4, a customer of a customer ID [IDa] has a password [Pa], three customer accounts [XXXX], [YYYY] and [ZZZZ] for settlement, and has [No-  
20 Limitation] on a transaction, and holds securities of [10000 Shares of Stock A] and [10000 Shares of Stock B]. Also, an customer of an customer ID [IDb] has a password [Pb], a customer account [JJJJ] for settlement, and has a  
25 [Market Order Prohibition] option with regard to a transaction, and holds securities of [1000 Shares of Stock C]. The customer of a customer ID

[IDb] is prohibited from performing any market orders based on the customer information.

5 The securities sales system 20 includes a recording medium K2 such as a disc, and a semiconductor memory. The recording medium K2 records thereon a program for instructing the securities sales system 20. The program instructs the securities sales system 20 to carry out the processes at steps A2, A8 to A10, A14, A15, A19  
10 and A20 of Figs. 3A and 3B.

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The securities transaction system 30 shown in Fig. 2 is provided for a securities market. The securities transaction system 30 is programmed to receive the transaction order  
15 information from the securities sales system 20, and to perform a transaction in response to the transaction order information, and to send the transaction result information indicative of the performed transaction to the securities sales  
20 system 20.

The securities transaction system 30 includes a recording medium K3 such as a disc, and a semiconductor memory. The recording medium K3 records thereon a program for instructing the  
25 securities transaction system 30 to carry out the processes at steps A11 to A13 shown in Figs. 3A and 3B.

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The account management system 40 is managed by a bank. The account management system 40 is a computer such as a workstation and a server. The account management system 40 is programmed to receive account settlement information from the securities sales system 20, and to settle accounts with respect to the performed transactions in response to the account settlement information. When the performed transaction is buying stocks, the account management system 40 transfers the payment from the customer account to an account of the broker operating the securities sales system 20. When the performed transaction is selling stocks, the account management system 40 transfers the payment from the broker's account to the customer account.

The account management system 40 includes a recording medium K4 such as a disc and a semiconductor memory. The recording medium K4 records thereon a program for instructing the account management system 40 to carry out the processes at steps A16 to A18 of Fig. 3B.

#### Operation of the Securities Transaction System

The operations of this embodiment will be described below in detail.

With reference to Fig. 3A, a customer accesses a securities sale home page provided by a securities sales system 20 through the customer terminal 10 (Step A1). The customer sends a  
5 customer ID and a password to the securities sales system 20.

The securities sales system 20 receives the customer ID and the password from the customer terminal 10. Then the securities sales system 20  
10 collates the received password with a password corresponding to the customer ID registered in the memory 21. If the received and registered passwords coincide with each other, the securities sales system 20 sends securities  
15 information (containing stock codes and names of stocks) to the customer terminal 10. The securities sales system 20 also sends an account list showing an account(s) available to the customer to the customer terminal 10 (Step A2).  
20 The available account(s) are registered in the memory 21 corresponding to the customer ID. If the received and registered passwords do not coincide with each other, the securities sales system 20 requires the customer terminal 10 to  
25 send a password again.

Then, the customer terminal 10 displays a securities information screen (Step A3). Fig. 5

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shows the securities information screen. In the securities information screen, the securities information and an input column for inputting order option information are also displayed. The  
5 order option information includes the number of buying or selling stocks, a transaction option indicating whether the requested transaction is buying or selling, an order option indicating whether the requested transaction is a market  
10 order or a limit order, and a limit price for the limit order.

Then, the customer decides a transaction to request and enters a content of the requested transaction in lines of an order condition  
15 information input column as shown in Fig. 3A (Step A4). Here, let us suppose that the customer decides to buy 1000 shares of the stock of Company A at a market price, and to sell 1000 shares of the stock of Company D at the limit  
20 price. As shown in Fig. 6, the customer enters the number of shares [1000], a transaction option [Buy] and an order option [Market Order] in the first line corresponding to Company A. The customer also enters the number of shares [1000],  
25 a transaction option [Selling], an order option [Limit] and a limit price [ $\alpha$ ] in the fourth line, which corresponds to the D corporation. The

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customer terminal 10 transiently stores the pairs of the order option information and the securities information as the transaction order information. As for the example shown in Fig. 6,

5 the customer terminal 10 transiently stores first and second transaction order information, the first transaction order information being indicative of a stock code [NNNN], the name [Company A], the number of shares [1000], the

10 transaction option [Buy] and the order option [Market Order], and the second transaction order information being indicative of a stock code [QQQQ], the name [Company D], the number of shares [1000], the transaction option [Selling],

15 the order option [Limit], and the limit price [ $\alpha$ ].

Then, the customer clicks a [To Account Information] button on the securities information screen, and the customer terminal 10 displays an account list screen shown in Fig. 7. The list of

20 the available accounts received from the securities sales system 20 is shown in the account list screen. The shown list includes information of bank names, branch names, account numbers, the holder names of the accounts. The

25 customer consults the list and selects one of the available account(s) for which the requested transaction is to be requested (Step A6). The

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information indicative of the selected account is transiently held by the customer terminal 10 as the account indication information.

When the customer clicks an [Order] button  
5 provided on the account list screen, the customer terminal 10 sends the account indication information and the transaction order information through the Internet 100 to the securities sales system 20 as shown in Fig. 3A (Step A7). A first  
10 set of the first transaction order information and the account indication information and a second set of the second transaction order information and the account indication information are sent to the securities sales  
15 system 20.

The securities sales system 20 receives the sets of the transaction order information and the account indication information (Step A8). The securities sales system 20 checks the transaction  
20 order information and the account indication information as described in the following.

(a) At first, the securities sales system 20 checks whether or not the customer account indicated by the account indication information  
25 coincides with any of the available accounts informed to the customer terminal 10 at the step A2. Then, if the customer account does not

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coincide with any of the available accounts, an error report is sent to the customer terminal 10.

(b) If so, the securities sales system 20 checks whether or not the order option

5 information in the transaction order information satisfies or fulfills all the conditions registered in the memory 21 for the customer. For example, the securities sales system 20 checks whether or not the order option is the market  
10 order while the market order is inhibited, or whether or not the number of shares exceeds the permitted maximum number. If the order option information does not satisfy at least one of the conditions, the error report is sent to the  
15 customer terminal 10.

(c) Then, If the transaction option in the order condition information is [Selling], the securities sales system 20 checks whether or not the customer has the securities to be sold,  
20 consulting the customer information registered in the memory 21. If the customer does not have the securities to be sold, an error report is sent to the customer terminal 10.

Then, as shown in Fig. 3B, the securities  
25 sales system 20 sends to the securities transaction system 30 the transaction order information with a system identifier for

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5 investigates whether or not the transaction is established. If the transaction is not established, the securities sales system 20 reports a failure of the transaction to the customer terminal 10. The transaction order identifier corresponding to the transaction order information is also reported to the customer terminal 10 for inform the customer of which part of the transaction is not established. Also, securities sales system 20 removes the  
15 information related to the transaction order identifier.

If the transaction is established, the securities sales system 20 prepares an account settlement information indicative of the settlement of accounts. For the settlement, the customer account indicated by the account indication information is used. The securities sales system 20 sends the account settlement information to the account management system 40 (Step A15). The account settlement information is prepared as follows. At first, the securities sales system 20 extracts the account indication

information and the customer ID correlated with the transaction order identifier received from the securities transaction system 30. Next, the securities sales system 20 extracts information indicating the payment to be settled, and the transaction option from the transaction result information, which is received at the step A14. When the securities sales system 20 recognized that the transaction option is "selling", the account settlement information is prepared so as to transfer the extracted payment from the broker's account to the customer account specified by the account indication information. On the contrary, When the securities sales system 20 recognized that the transaction option is "buying", the account settlement information is prepared so as to transfer the extracted payment from the customer account to the broker's account. Also, the information indicative of the securities owned by the customer of the customer information (refer to Fig. 4) is updated on the basis of the transaction result information.

The account management system 40 receives the account settlement information (Step 16). Then the account management system 40 checks whether or not the customer account indicated by the account settlement information coincides with

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one of the accounts previously registered therein. When the customer account coincides with the one account, a transfer is carried out between the customer account and the broker's account to  
5 settle the accounts (Step 17). The account management system 40 sends settlement result information indicative of the result of the settlement to the securities sales system 20 (Step 18).

10 The securities sales system 20 receives the settlement result information from the account management system 40 and transfers it to the customer terminal 10 (Steps A19, A20).

15 The customer terminal 10 receives the settlement result information from the securities sales system 20, and displays it to the customer (Step A21).

Here, the securities sales system 20 may electronically inform the customer of the  
20 information with regard to the check results of the transaction order information and the account indication information, the transaction result information sent from the securities transaction system 30 and the settlement result from the  
25 account management system 40. The informing may be achieved through a home page provided by the securities sales system 20, or electronic mails.

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Although the invention has been described  
in its preferred form with a certain degree of  
particularity, it is understood that the present  
disclosure of the preferred form has been changed  
5 in the details of construction and the  
combination and arrangement of parts may be  
resorted to without departing from the spirit and  
the scope of the invention as hereinafter claimed.

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